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Instructors' Summary of Military Articles
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CONTENTS

DIGESTS OF SELECTED ARTICLES AND DOCUMENTS

THE METHODS OF ARTILLERY SUPPORT OF THE ATTACK DURING THE WAR

By Colonel Roger. 58 pages. French text.—*Revue Militaire Francaise*, Oct., Nov., and Dec., 1921.

This series of articles forms an interesting presentation of the subject of the limitations and disadvantages of the rolling barrage and kindred artillery fires, as employed during the World War. The author's conclusions are as follows:

In some cases the rolling barrage may be impossible or even dangerous; in many other cases, the rolling barrage and the raking fires are almost useless, because the infantry is not able to follow them closely—a primary condition in order that their action may effectively aid the advance.

Under the most favorable circumstances for the employment of these fires, their material effects have little importance, their moral effects upon the defenders are not sufficient to neutralize the latter for any appreciable depth or length of time, and their moral effect upon the assailant disappears rapidly because the latter derives neither the benefits nor the surety which he expects from it.

The action of these fires can only be the complement (not indispensable, but advantageous in certain cases) of other actions of artillery, more powerful and permitting a concentration of fire and the liaison of all arms to be realized,—essential pledges of success. The employment of barrages always requires—or else they will be absolutely illusory—so large a number of batteries as to absorb nearly all the 75-mm. batteries which it is possible to appropriate to a division engaged in the attack, thus excluding these batteries from being employed on more efficacious missions.

The error at the base of the virtues of the rolling barrage seems to be born of the magic of the words forming the

picture, "Rolling barrier, raking fires." Those terms evoke at first sight an idea analogous to that of the famous "Russian steam roller." It seems that everything ought to be annihilated, that there will remain few or no machine guns, that the enemy's reserves will not be able to submit to the rapid stroke of the scythe without being cut down like grain. The reality is quite otherwise; strong points and centers of resistance are not sufficiently injured by that rapid stroke of the scythe, superficial and without consistency. After its passage it is necessary to return and treat them with more efficacious methods; therefore, why not have applied the mortal or anaesthetic dose in the first place? This would have taken less time, less ammunition and, above all, it would have cost less dearly in men's lives.

The desire to act everywhere in order to reach the elements of the enemy, wherever they may be, leads to a dispersion of the action of the artillery over all the terrain, and causes it to produce only insignificant effects upon the points which the enemy is occupying. The amount of artillery which can be emplaced is limited, and, however generous the allotment of artillery may be, within the limits of that available, there will never be enough of it to act with the desired intensity against the only two true enemies of the attacking infantry; the artillery for one, and the machine guns and enemy riflemen who are in position to fire upon the assaulting troops, for the other.

Whatever the employment of the artillery may be in the course of an attack, that employment will permit success to be gained with the minimum of losses only if it is regulated in conformity with the principle *of concentration of all the means which the artillery of the attack can provide, upon the fighting enemy who is immediately dangerous.*

Anti-Aircraft Artillery

By Capt. K. M. Loch, R. F. A. 10 pages.—*Journal of the Royal Artillery*, Jan., 1922, p. 433.

This is an interesting reply to an article in the July, 1921, *Journal of the U. S. Artillery* (Coast Artillery), by Major H. J. Knerr, C. A. C. Major Knerr's article is most pes-

simistic as to the value of ground fire, whereas Captain Loch, in answering the article, expresses the belief that results obtained during the World War, together with progress made since the armistice, give promise of the development of an effective ground-fire air defense.

The article goes into considerable detail to show that the odds against a hit on a target which is flying a straight course, in the case of a salvo from a 4-gun battery, are as low as 25 to 1. Furthermore, by an analysis of missions of hostile flights, the author lays emphasis on the value of this ground fire to disturb the pilot so as to defeat the mission. For the officer desiring to get at the basic problems of anti-aircraft artillery gunnery and their relation to flying target missions, the article is worth while, primarily because of the simple and non-mathematical manner in which the problems are presented. For the purposes of these schools, however, the value of the article lies in the fact that in the main it confirms our present teachings, as presented in the school course in Tactics and Technique.

NEW "FOUR-POINT-SEVEN" GUNS

By B. P. Joyce. 4 pages.—*Army Ordnance*, Jan.-Feb., 1922, p. 212.

This article, which is a comparative study of pre-war and post-war corps artillery guns, gives a clear and concise description of two new types (the 1920 and 1921 models) of the 4.7-inch gun, including a comparison with the 1906 model.

The 1920 model is described as built to use the same carriage as the 155-mm. howitzer, and is not thoroughly satisfactory due to the necessity for compromises in fitting both weapons to a combination carriage. This idea was abandoned in the 1921 model, with the result of shortening the time required for going into action, and cutting down the necessary road space.

It remains to determine whether or not the principle of interchangeability between gun and howitzer is worth adhering to, in the light of some of the advantages already demonstrated for the principle of designing each weapon to

fulfill its own particular requirements, and this is a question for the using services to answer after extensive tests under severe field service conditions.

THE EVOLUTION OF FIELD FORTIFICATIONS DURING THE LATE WAR

4 pages.—*Military Engineer*, Mar.-Apr., 1922, p. 82. (Digest copied from the *Royal Engineers' Journal*. The original article, by Captain Botte, appeared in the *Revue Militaire Generale*, May-June, 1921.)

The points brought out by the author are generally in accord with the teachings at the General Service Schools. He points out:

1. That the intervals between areas held must be defended.
2. That troops must not be crowded into the areas held. Strong points and centers of resistance are likely to write upon the ground, for the enemy to read, the distribution of our troops in the defense. Concealment and uniformity in the appearance of the occupation are important.
3. That the automatic weapons are the framework of the infantry defense.

The author states that a review of the documents available indicates the following general organization of a position:

"A covering position to stop partial attacks and to delay and break up larger ones. It is defended by a third or a quarter of the infantry divisions in the sector.

"A main position of resistance, at least 2,000 meters from the enemy, on which the enemy must be beaten. It is held by two-thirds or three-quarters of the infantry divisions in the sector.

"A *barrage* position 6 or 8 km. from the enemy, destined to put a limit to his success, and defended by the reserve divisions which must be stationed as close to the position as possible."

MACHINE GUNS (Cavalry)—ASSIGNMENT AND DISTRIBUTION

Mimeograph pamphlet, Department of Cavalry Weapons, Cavalry School, Fort Riley, Kansas. Prepared by the Machine Gun Section of the Cavalry Board. 4 pages.—Instructors' File No. P. H. 72-25.

This pamphlet discusses briefly the assignment and distribution of machine guns, both for mounted action and dis-

mounted action. Under the heading, general considerations, it states: "Cavalry organization contemplates alloting machine gun units in combat in accordance with the general plan, the mission of a particular squadron or larger unit, or the tactical situation at the moment. For example, a mission to gain information requires less fire support than one to secure and hold a position or one in support of a mounted action. The squadron is the smallest unit to which machine guns are normally assigned or attached."

Regarding the assignment and distribution for mounted action, the statement is made, "When the mission of the cavalry squadron is one favoring or requiring mounted action with machine gun support, the proportion of guns assigned to the squadron would ordinarily be greater, if additional guns are available, than where purely dismounted action is expected. The additional machine guns in mounted action make up the fire power lost in the rifles of the men who remained mounted. A troop of six guns might then be assigned to the squadron, thus enabling the greater part of, or all of, the squadron to remain mounted." Also, "A cavalry regiment on a detached mission is allotted one or two machine gun troops in accordance with its mission and the fire support it may require." * * * "A dismounted cavalry squadron, being comparable in rifle strength to an infantry company, would ordinarily receive ample support from the two guns of a machine gun platoon."

For sustained dismounted attacks on well organized positions, by cavalry brigades or larger units, the machine guns are divided into "forward guns" and "rear guns." In attack, the forward guns maneuver with and support, but do not fight from the same positions as, the assaulting units. Rear guns are held in rear to cover the attack by applying fire along the whole front under attack. They neutralize adjacent areas, concentrate on particular targets, protect the assailants during reorganization and consolidation, and cover a withdrawal. These guns are allotted on the basis of one gun to each 40 or 50 yards of enemy frontage under attack. Rear guns are under the orders of the commander of the attack, and are controlled through his machine gun officer.

"In defense, the distribution into forward and rear guns insures distribution in depth, which lessens the likelihood of enemy penetrations and provides flank protection."

In the distinctly dismounted actions of cavalry, where the horses are kept at hand to retain the mobility of the unit, and where the maximum fire effect must be developed promptly, as in the "in-and-out" tactics of cavalry, against the flanks or rear of a column or position, all guns are used for the close, direct support of assaulting units. Rear guns are dispensed with.

"The distribution of guns for the rapid decision and in-and-out attacks, is based on the number of machine guns required by each dismounted squadron in accordance with the separate mission of each. The basis of distribution is the platoon of two machine guns for each squadron."

Automatic and Semi-Automatic Rifle Fire

By Lt. Col. Jennings C. Wise, O. R. C. 3 pages.—*Infantry Journal*, Feb., 1922, p. 133.

This article presents a brief discussion of the relative values of the semi and full-automatic use of the automatic rifle. The author seems to lean in favor of the full-automatic fire, notwithstanding the greater dispersion; he believes the Infantry Drill Regulations (1919) should be "so amended as not to give rise to the erroneous belief that semi-automatic fire is inherently superior under ordinary circumstances to automatic fire."

Problems of Mechanical Warfare

By Col. J. F. C. Fuller, D. S. O. 18 pages.—*Army Quarterly*, Jan., 1922, p. 284.

This is an interesting article, by a tank enthusiast, predicting the developments in the use of tanks and the future increase in the mobility of combat and supply units by means of mechanical transportation.

In August, 1914, the tactical mobility of the armies was based on muscle—the infantry marched, the cavalry

rode, the guns were dragged by horses, and, except for a few lorries and airplanes, the soldiers were scarcely more mobile than their ancestors at Waterloo. The war which followed was different from preceding wars, in that the railway, the great civil means of movement, was at once turned to strategical account. Where the railways were numerous, fronts became continuous, as in France and Flanders; where few, broken, as in Russia. In railless countries, operations were of the small-war type.

In the days of Alexander, as soon as the ranks were broken by the infantry, pursuit by cavalry clinched the victory. With trenches protected by entanglements, rendering advance almost impossible, it became necessary in the World War to use tanks to charge, disorganize and demoralize the enemy, and then the infantry advanced to drive the enemy from the field. In this reversal of the historic method of attack is to be discovered the germ of a great number of our future problems.

The tanks carried out, therefore, the primary duty of the infantry, namely, the disorganization of the enemy. The cavalry attempted to pursue, but failed consistently, on the western front, as they could not face the machine gun; the infantry attempted to pursue, but failed equally because of their lack of mobility; finally, the tanks attempted to pursue, but also failed because they did not possess the necessary radius of action and the requisite mobility to protect themselves against the enemy's gunfire.

In wars of the future it may be expected that tanks will be developed with sufficient speed and radius of action to take the roles now played by the cavalry, infantry and artillery. A light cavalry tank with a speed of 25 miles an hour will certainly replace the cavalry and infantry of the past in war of maneuver, and the artillery will be drawn by tractors and probably placed in tanks so that it can provide for its own local protection.

The armored tank will create a tactical condition similar to that created in the past by armored knights, and infantry will continue to exist, but only as defenders of positions—railheads, bridgeheads, workshops and supply magazines. A purely defensive weapon to assist in holding positions may be provided by tank mine layers, which in

turn would cause the development of tank mine sweepers. In order to have the troops necessary to occupy important positions, tank transporters will be provided; these will be lightly armored and made gas proof, and endowed with sufficient speed to enable them to escape from their strongholds should the tank mine sweepers succeed in clearing a way through the mine fields. As warfare will become more and more mobile in nature, fast-digging cross-country trench diggers will be provided, so that, when halted, the infantry and their transporters will be able to seek cover by ground in order to protect themselves from aircraft attack.

Even with an army at the present time—a road-bound army—the cross-country supply transporter can reduce the length of the marching columns, can reduce the weight carried by the soldier, and can enable him when deployed to remain deployed and be provided with shelter, hot meals, cool drinks and the hundred and one requisites which differentiate civilized warfare from the combat of barbarians. This will be much more the case in tank warfare of the future.

The use of tanks in small wars will greatly assist in covering large areas in a short time, materially decreasing the length of the war, making supply more certain, and preventing frequent outbreaks of outlaw bands. Tanks require no feed when not in use, and when perfected as we may reasonably expect, will have a decided influence on the size of our armies.

Attack of defended harbors may be made as a surprise by using floatable tanks which can be launched from ships, under cover of darkness, at points some distance from the harbor to be captured. They could then crawl up the beach, and, supported by aircraft, open their attack the same evening.

Aerial attacks on air centers— landing grounds, repair shops and aircraft factories—may be made much more effective by having fast tanks, of great cruising radius, accompany the aircraft on their raids, assuring complete destruction.

The increased interest of many nations in tank development, and the number of tank battalions being maintained, assures the future use of these weapons in ever increasing

numbers. Many artillery horses are being replaced by tractors, and mechanical transportation may be expected to change the wars of the future.

CHEMICAL WARFARE

By Capt. S. J. M. Auld, 4th (Terr.) Battalion Royal Berks Regt. Lecture delivered on Dec. 8, 1921, at the School of Military Engineering, Chatham, England. 15 pages.—*Royal Engineers Journal*, Feb., 1922, p. 57.

This lecture was delivered by a former lieutenant colonel of the British wartime Gas Service, who, as the British gas liaison officer in the United States was an important factor in the inception of the measures taken during the World War to place the American Army on a proper basis of gas preparedness, training and organization. The paper is of interest as showing the present thought in England, from the viewpoint of a recognized gas enthusiast, of chemical tactics as developed during the World War, and of the present status and future developments of the same.

Continued Use of Gas. The lecture, it is to be noted, was delivered a month before the adoption by the Washington Arms Conference of the resolution proscribing the use of gas in the future. The speaker emphasizes from beginning to end, however, his belief that, regardless of any international conventions that might be adopted, the use of chemicals has come to stay. "No case is known of a successful new weapon or a tactical advantage having been discarded once its value was approved. No agreement or treaty has proved strong enough to bind an unscrupulous enemy seeking an advantage, or for that matter one with its existence at stake."

Cloud Attacks. Captain Auld's statements regarding World War chemical tactics are generally in accord with the teachings at these schools. As to cloud-gas (cylinder) attacks, the method is said to be very crude, but to have nearly always proved very effective because of the ground it covers. After falling more and more into disuse, this method, just before the close of the war, enjoyed a wonderful revival in special circumstances by the organization of

highly concentrated "beam" attacks, delivered from light trains instead of from trenches. Around Lens and in the Ypres Salient, advantage was taken of the network of narrow gauge lines to bring up trains loaded with many thousand cylinders of gas, which were discharged simultaneously by electricity. As many as 6,000 cylinders, from three trains in echelon, have been discharged over a short front in the space of a few minutes.

Use of Gas by Artillery. Stress is placed on the importance of the use of artillery chemical shell. While artillery shell contain relatively little gas compared with projector drums, or even Stokes mortar bombs, more gas was used in the form of artillery shell than in any other way. The reasons are chiefly the longer artillery range; greater independence of wind direction; the fact that the use of gas by artillery does not necessitate special personnel, nor interfere with the activities of other troops; rapidity of fire and coordination of fire direction; better organization and greater simplicity of ammunition supply.

When the British started to use gas in 1915, less than 5 per cent of the total shell were chemical-filled. This proportion increased to 25 per cent by 1918, with a prospect of still more in the future. The Germans, during 1918, Captain Auld states, actually supplied their dumps with 50 per cent of chemical shell.

Casualties vs. Neutralization. In gas attacks there are two main objects—the infliction of casualties, and neutralization. Generally speaking, the infliction of casualties is the more important, because, if sufficient in extent, it achieves the second object more effectively and for a longer period. But so far, the casualties, though enormous, have never been sufficient in themselves to produce results of the strategical value of neutralization. Indeed, there were many cases in the last year of the war where the casualties produced by a heavy bombardment were of secondary importance—merely incidental to the denial of mobility and terrain to the other side.

Even when an enemy is able to recognize a gas attack and to adjust his protection in time, a considerable tactical advantage is gained by compelling him to retain it. Inconvenience is caused, activity greatly restricted and vision in-

terfered with, especially at night. Heavy tasks, like digging and carrying, are interrupted owing to the increased exertion, and the duties of observers, wiring parties and, in fact, everyone, suffer considerably.

Although the possibility of exhausting the enemy's masks was not great during the war, yet in the event of a siege, where renewal of the gas mask would be impossible, it would assume great importance.

Mustard Gas. The introduction of mustard gas changed the whole aspect of war. When first used, as a defensive agent, it delayed the British attacks of the autumn of 1917 by a fortnight. The use of toxic persistent gases is most important, enabling a commander to deny whole areas to his opponent, to contain successfully the strongest fortified posts or to effect their neutralization, and, above all, to rest his attack on artificial flanks.

Gas Defense. Stress is placed on the necessity for adequate gas defense. "I could give you instance after instance where our gas discipline saved lives, saved positions, saved armies." Consolidation of a position against gas attacks should be automatic and should rank with consolidation against bombardment or direct assault.

Future Developments. As to future developments, the lecturer affirms that this will be all round—in weapons, tactics, materiel. Gas will apply to all arms. With the infantry it will probably start with rifle grenades and toxic smoke candles. The mobility of the cavalry will be used for the swift transport and installation of cloud generators, and for the carriage of light mortars. Tanks will be particularly concerned with chemical warfare, more especially in the defense against gas. The whole tank may have to be turned into a kind of gigantic respirator, and that means making it air-tight. Gas may prove to be the Achilles' heel of the tank. Probably *all* artillery shell will be partly filled with chemicals. Consider the added effect of chemicals to a long-range bombardment of villages, camps or cross roads. It is pointed out, however, that gas is fundamentally independent of heavy ordnance. An enemy with little or nothing in the way of heavy guns can still be a formidable opponent by combining skillful entrenchment with a copious supply of chemicals to be fired from the lightest of mortars, from pro-

jectors, or for use as a toxic smoke. Chemicals will be used by airplanes and against airplanes.

As regards materials and the dependent tactics, even the immediate future is difficult to forecast. The possibilities of chemistry are almost infinite, and after all, important as chemical warfare is, we are still in the blunderbuss stage.

In some form or other gas is applicable to every phase of war. Action and reaction are equal and opposite. Sooner or later defense balances offense. But there is a lag, sometimes a big lag, before the balance is adjusted. The duration of that lag may decide a war.

THE ADMINISTRATIVE SERVICES OF THE BRITISH EXPEDITIONARY FORCES DURING THE GREAT WAR

10 pages.—*Army Quarterly*, Jan., 1922.

This article gives an excellent bird's-eye view of the development and operations of the supply machine in the British army during the war. The subject is already in very condensed form, and is therefore difficult to condense further. The article is especially interesting in the light of the splendid results that we know were achieved by the Remount, Veterinary and Salvage Services.

The supply problem was a very difficult one, not only because of the enormous number of combatants, but also because of the new inventions and the abnormal development of equipment, and because of the economic scarcity in the later stages due to world exhaustion. For this kind of war none of the combatants had had any previous experience of much value, least of all the British Empire. An interesting contrast is presented in the fact that, during the Napoleonic wars, such a painstaking and intelligent observer as Jane Austin could write a series of novels without indicating once that her country was involved in a great campaign.

The British army in France was really a nation in concentrated extract. The army was in very great measure its own lumberman. It was in some measure its own farmer,

growing vegetables and other food and fodder stuffs, and helping as tiller and harvester the French peasant. (In 1918 it saved the crops on 18,000 French acres, harvesting them at night, the soldiers having to work sometimes in gas masks.) The army was its own repair tailor and boot-maker, and laundryman. The soldier going out of the line had always clean underwear waiting for him, and his soiled garments were disinfected, cleaned, repaired and reconditioned, while such garments as were beyond repair were shipped away as rags for the shoddy mills of Dewsbury.

The army, three million, and the animals, half a million, were fed with a bountifulness, a variety and a certainty, that practically banished from an exacting campaign sicknesses due to bad nourishment; this notwithstanding that the world towards the end (Europe in particular) was suffering from a severe pinch in food supplies. This could only be made possible by an economical organization which eliminated waste, which saved from the camp kitchen the fat and the bones and the swills. Not only was food supplied in plenty, and economically utilized to the last scrap: it was also supplied with a nice consideration of individual tastes that could remember the spices of the Indians' curry and the nut-oil for the Chinese laborers; and when its hospitality was extended to the soldiers from the United States, it was ready with coffee beans and with hand mills to grind the beans.

Transport. In considering in some detail a few of the supply services, first attention is given to the matter of transport. Beginning in 1914 with a very simple transport problem, the British transport problem grew by 1918 to include a half-million animals; some 50,000 trucks, tractors and motor cars; large road, light railway and standard railway systems; and finally also an Inland Water Transport Organization.

Animals. The duty of keeping the large number of transport animals fit for duty was complicated enormously by the mustard gas of the enemy, and by air raids which made it necessary to split up horse-lines into small groups with traverses between. It was necessary to utilize every local opportunity for growing forage and to guard against the waste of a pound of grain. Economical organization had

to go further and provide two categories for the animals, category "A" fit for full work and "B" for lighter work. Thus the sick rate was brought down to 7½%, and even at the time of the Armistice, after the long chase of the enemy, was only 9%. Horse-mastery in the British service reached a very high standard, and it was through the unsparing work of the men, with the brain and hand, that animals were kept so fit. This was not only of advantage to the transport itself, but had as well an advantage to the morale of the men, as it helped to keep them in good spirits to know that the animals that worked with and for them were in good condition.

The mobilization of the horse strength of Great Britain in 1914 was assisted by the willing and instructed patriotism of farmers and other horse owners. It is calculated that 17% of the total civilian horse strength of the country was mobilized. Recourse had also to be had to the importation of mules.

Roads. In 1918 the British army was maintaining 4412 miles of French roads; in 1917 it made 1215 miles of new road, and used 2½ million tons of road metal.

Motor Transport. In the winter of 1917-1918, after the battle of Passchendaele had exposed a weakness in light railways—that they had to work along defined tracks which could be intensively shelled by the enemy—it was decided to trust more to motor transport. A complete reorganization was effected, with the central idea of doing away as far as possible with the "earmarking" of motor vehicles for particular units or tasks, and making the total strength mobile and liquid. There was thus formed the G. H. Q. Motor Reserve, which proved of enormous strategical benefit in the spring of 1918.

As to *light railways*, the value possessed by them in periods of stabilization tended to become less as the war became one of movement. The great advance in the latter part of 1918 was planned on the principle of concentrating labor in pushing forward the standard gauge railways and the roads forward from them. Light railways were given a secondary place. This proved to be sound.

At the time of the Armistice, the *standard-gauge railway* system, on a day of intense fighting, was capable of carrying up 1934 tons of supplies per mile of front.

The problem of *munitions supply* was a vast one. The following are the records for single day's supplies for certain battles:

Aug. 18, 1918.	Beginning of final thrust	15,598 tons.
Aug. 29, 1918		23,706 tons.
April 4, 1917.	Vimy	24,706 tons.
June 7, 1917.	Messines	20,638 tons.
July 31, 1917.	Ypres	22,193 tons.

In the depots in France there was kept a reserve of 258,000 tons of ammunition, equal to about a month's normal issues. A heavy item in munitions supplies was for defense against enemy gases and for the British offensive gas service. Medical supplies also were on an enormous scale.

Organization of Supply. Emphasis is laid on the point that when the vast increase of the responsibilities of the Quartermaster-General in the field suggested the experiment of attempting a division of those responsibilities, the experiment proved unsound and dangerous. In every single theater of war the hard logic of facts drove home in due course the lesson that supply (in its widest sense) and transportation are functions which can, and must, be assigned to one man only, i.e., the quartermaster-general in the field.

The Training Centers

By Col. M. B. Stewart, Gen. Staff. 5 pages.—*Infantry Journal*, Feb., 1922, p. 119.

This is a brief sketch of the corps area training centers, with the reasons necessitating their establishment, together with the ideas controlling their organization, composition and functions. A perusal of this article will furnish the answer to a question that has been asked by many officers in the past two years, "What is a training center?"

The task assigned a training center is clearly and concisely expressed: "During peace, to carry on the work of receiving, processing and assigning recruits for the Regular Army and of training all of the elements of the civilian army; during war, to carry on the work of inducting the draft and of training replacements for all the component parts of the Army of the United States."

Then follows a description of the organization and composition (personnel provided) and an explanation of the two general divisions of the training center into the depot group and the training group. The depot group, administrative in its nature, is the nucleus of the depot brigade and in war time expands into the machine for handling the mobilization. The training group is composed of a balanced detachment of all arms, in which every officer and enlisted man is expected to be thoroughly trained to carry on the particular kind of instruction with which he is charged. This group is essentially a body of trained instructors. The methods by which this group will operate in peace and war are outlined.

REVIEW OF NEW BOOKS RECEIVED IN THE LIBRARY

TACTICS (Based on the World War)

Private translation (not published) of a German book written by Major Rohrbeck. 468 pages.

The original of the above book, in German, was published in 1919 (E. S. Mittler & Son, Berlin). The book—although probably less authoritative—is of the same general nature and scope as Balck's *Development of Tactics in the World War*, an English translation of which latter work is about to be published by the General Service Schools. Rohrbeck's *Tactics* includes general chapters on war and on leadership and its means; chapters on the organization and employment of the various arms, and on the tactics of the combined arms (including position and mobile warfare, frontier and coast guards, and cooperation of the army and navy); and a chapter on the supply of fighting troops.

HISTORY OF THE WORLD WAR

By Francis A. March, in collaboration with Richard J. Beamish, Special War Correspondent. With a preface by General P. C. March. 726 pages. (The John C. Winston Co., Philadelphia, 1918.)

This popular narrative of the war was written during the progress of the conflict, apparently as the events occur-

red, hence at a time when the author could not have had all the facts before him. As a source book, the history contains much information of value, including a number of maps and photographs (not listed), and a valuable summarized chronology of the war. The book covers the subject of the war in a broad manner, giving a bird's-eye view, not only of the various phases of the war on the western front, but also of the operations on the Russian, Balkan and Italian fronts, in Macedonia, Palestine, the Far East and South Africa, and on the sea. Chapter LVI presents, in five pages of text, a condensed statement of "the war by years."

JENA CAMPAIGN (Source Book)

Compiled by Col. Conrad H. Lanza, F. A. English text, 684 pages, with maps. (The General Service Schools, Fort Leavenworth, Kans., 1922.)

This book was prepared for the use of the members of the General Staff School. Its scope is sufficiently indicated by the title and by the preface, from which the following is extracted: "This volume consists of copies of documents relating to the Jena Campaign which are in the library of The General Service Schools at Fort Leavenworth. As the library does not contain all of the important documents relating to this campaign, this volume does not pretend to contain all documents which might well be considered. But the number and character of the documents included are more than sufficient to form the basis for tactical and strategical studies of this most important campaign."

It may be added that, although a compilation, such a designation fails to indicate the excellence of the arrangement and the value of the material included. The book presents, under one cover, selected documents of sufficient scope to permit the military student to make a complete analytical study of this campaign.

A Dictionary of Napoleon

By Hubert N. B. Richardson, B. A. 465 pages. (Funk and Wagnalls Co., New York.)

This volume constitutes a collection, in dictionary (alphabetical) form, of the historical and personal matter relating to Napoleon. The various articles are written in a popular style, giving a brief summary of the important events. The military articles, so far as they have been checked, are found to contain material inaccuracies. The book contains a chronological table of the principal events connected with the life and times of Napoleon, as well as a very good bibliography of the great soldier.

Major Edward E. Hartwick, Soldier and Citizen

By Gordon K. Miller. 135 pages.

This volume is a biographical sketch, together with a compilation of Major Hartwick's letters and diaries written by him during the Spanish-American and World Wars. A graduate of the Military Academy at West Point, Major Hartwick served as a lieutenant of the 9th Cavalry Regiment during the Spanish-American War, taking part in the campaign at Santiago, Cuba. After the war, he resigned and went into civil life. At the outbreak of the World War, although then 45 years of age, he patriotically re-entered the service, as a major of the 20th Engineers (Forestry). His death occurred at Bordeaux, France, in March, 1918. Outside of the natural interest in the narrative of a brave soldier and citizen, who gave his life in his country's service, the letters and diaries concerning the Spanish-American War are of interest as original sources of information concerning the cavalry operations at Santiago, including the attack on San Juan Hill.

DOCUMENTS RECEIVED IN INSTRUCTORS' FILE ROOM

FROM ARMY WAR COLLEGE

Army War College Course, 1921-22, War Plans Division:

Comments on War Plans Division Course (9 pages) ----------P. H. 82-A-14
Statement of the Course in Operations and Training (5 pages) ----------P. H. 81-E

FROM CAVALRY SCHOOL

Cavalry School Course, 1921-22. Instructors' File No. P. H. 72-12 to 33. Includes among other papers the following:

Cavalry Machine Gun Organization (8 pages)--P. H. 72-32
Cavalry Machine Guns, Assignment and Distribution (4 pages) ----------P. H. 72-25
The Palestine Campaign, Parts II to VII (66 pages) ----------P. H. 72-14, 16, 17, 18, 19, 21
The Mesopotamian Campaign (13 pages) P. H. 72-33
An Indian Cavalry Action in Mesopotamia (5 pages) ----------P. H. 12-31
Instructions for Solving Problems (4 pages)-----P. H. 72-13

FROM ECOLE SUPERIEURE DE GUERRE (FRANCE)

Conferences sur le Service d'Etat-Major. (Conferences on the General Staff, French text, 587 pages.) Includes chapters on the organization of army corps and divisions, and the evolution of the same during the war; the organization and role of the general staff; the medical service in war; the service of administration and supply; the functions of the 2d bureau of the general staff in the corps and division; the documents of the general staff. Instructors' File No. 951.30.

MISCELLANEOUS DOCUMENTS

The Orientation of the Cavalry. (Translation of an article which appeared in the *Revue de Cavalerie*, July-August, 1921.) (9 pages.) By Gen. Brecard. Translated by Col. Conrad H. Lanza, F. A. Instructors' File No. 1200-J.

Information Bulletin No. 3, Organized Reserves. (22 pages.) Instructors' File No. P. H. 68.

R. O. T. C. Memoranda Nos. 10 and 11. (20 pages.) Instructors' File No. P. H. 65.

MAGAZINES RECEIVED IN LIBRARY DURING MONTH

NOTE:—In addition to magazines which will hereafter be specifically listed, the following weekly and semi-weekly periodicals are received currently in the library, and will hereafter be noted only when necessary because of articles of special interest:

WEEKLIES:

Army, Navy & Air Force Gazette (London).
Army & Navy Journal.
Army & Navy Register.
Engineering News-Record.
Illustrated London News.
L'Illustration (Paris).
Literary Digest.
Militar Wochenblatt (Berlin).
Panama Canal Record.

SEMI-MONTHLIES:

Arms & The Man.
Canadian Military Gazette.
Revue des Deux Mondes (Paris).
Revue de Paris.

MILITARY MAGAZINES

United States

Army Ordnance. Jan.-Feb., 1922. Includes articles on Self-propelled Track-Laying Artillery, New 4.7-inch Guns, Artillery Fuzes, Propellant Charges, and Military Pyrotechnics.

Infantry Journal. Feb., 1922. Includes the following articles of interest: The American Expeditionary Forces in Europe (German viewpoint, continuation); The Champagne-Marne Defensive (continuation); a comparative study of automatic and semi-automatic rifle fire; The Training Centers; Bulgaria's Role in the Balkan War (1912) and in the World War; The Military of China.

Journal of the U. S. Artillery. (Coast Artillery.) Feb., 1922. This is a special number devoted to the Reserve Officers' Training Corps (principally coast artillery units).

Military Engineer. Mar.-April, 1922. Includes the following articles of interest: Operations of a Divisional Engineer Regiment (1st Engrs.) in France; The Evolution of Field Fortifications During the Late War; Road Work for the Artillery (an account of the engineer operations in connection with the approximately 600-mile march of a heavy artillery regiment through the Carolinas and Virginia); The Nord Railway (France) During and After the War; Electric Power in the French Base Ports.

Military Surgeon. Feb., 1922. Continues articles referred to in the January *Summary* (History of Military Medicine, and Critique of the Army Ration).

U. S. Naval Institution Proceedings. Feb., 1922. Contains a continuation of Rear Admiral Chandler's article on Principles of Command.

England

Army Quarterly. Jan., 1922. Includes the following articles of interest: Problems of Mechanical Warfare; The Administrative (Supply) Services of the British Expeditionary Forces During the Great War; The Strategy of the Campaigns of the Egyptian Expeditionary Force (Palestine); The German II Cavalry Corps at Le Cateau; a study of the historical and present status and treatment of prisoners of war; and a study of the organization and tactics of the ancient Byzantine army ("an army superior in organization, administration and tactics to any modern army up to the time of the French Revolution").

Journal of the Royal Artillery. Jan., 1922. Includes a lecture by the wartime Director of Military Intelligence, British War Office, on Military Intelligence During the World War; an account of the engagement between the German warships and the shore batteries at the Hartlepools, Dec. 15, 1914; and an article on Anti-Aircraft Artillery.

Royal Engineers Journal. Feb., 1922. Includes a lecture on Chemical Warfare (tactics and developments); and Some Experiences of an Engineer Officer with the Salonika Army.

France

Revue de Cavalerie. Jan.-Feb., 1922. Contains conclusions of two serial articles noted in the January *Summary* (Evolution in the Organization of the German Cavalry During the War; and French Cavalry in the Pursuit in Macedonia). Also contains brief notes (1¼ pages) concerning the use and organization of armored automobiles.

Revue d'Infanterie. Jan., 1922. Includes continuations of the following articles noted in the January *Summary*: The Evolution of the Methods and Conduct of Infantry Combat from 1870 to Date; a Study of the Employment of Tanks; Liaison and Transmission Between Artillery and Infantry.

Revue Militaire Francaise. Back numbers have been received for the months July, 1921, to Feb., 1922, inclusive. These numbers contain the following articles of interest, many of which are in the form of serial articles: *July*: The Conduct of the War (to the Battle of the Marne) (concluded in the Aug. number); The German High Command in 1914, from the German viewpoint (continued in the Aug., Sept., and Oct. numbers); The Military, Diplomatic and Economic Tendencies of the War on the Eve of the Battle of Verdun; The Industrial Preparation for the War, in France and Germany (continued in the Sept. and Oct. numbers). *August*: The Taxis of the Marne; Awaiting the Battle of March, 1918; The Maneuver of Montdidier, August, 1918 (continued in the Sept., Oct., Nov. and Dec. numbers). *September*: The French Military Reorganization. *October*: A Method of Studying the Art of War; The Methods of Artillery Support of the Attack During the War (continued in the Nov. and Dec. numbers). *November*: The Recruiting of the English Army During the Great War; The 2d Italian Army Corps in France; The Genesis of the German Plan of War (concluded in Dec. number). *January*: The Future of Tanks; The

French Troops in Italy During the Great War; A German Controversy Concerning the Infantry. *February*: Tanks and the High Command; A Study of a System of Artillery; The Hindenburg-Ludendorff Campaigns on the Eastern Front; The Battle of Warsaw (Polish-Bolshevik War).

Revue Militaire Generale. Jan., 1922. Contains: The French Cavalry During the First Three Months of the War; The Cavalry That We Need (a discussion of the necessity, role and organization of cavalry); The Trench of Thirst (episodes of the combats about St. Mihiel); and continuations of articles listed in the January *Summary* concerning Strategy and Operations in the East (Alsace-Lorraine), and The Recasting of the Regulations and French Doctrines of War.

Spain

Memorial de Artilleria. Dec., 1921. Nothing of particular interest.

Miscellaneous Magazines

Archives de la Grande Guerre (Paris). Nov., 1921. Includes: The Role of the 5th French Army (August, 1914), and the Austrian Step Toward Peace (September, 1918; a letter from William II to the Emperor Charles).

Bulletin of the Pan American Union. Feb., 1922. Nothing of special interest.

Current History. Feb., 1922. Contains proceedings of the Washington Arms Conference from Dec. 20, 1921, to Jan. 18, 1922, including reports on the question of abolishing chemicals in war by the committee of experts, the American advisory committee, and the General Board of the U. S. Navy.

Journal of American History. 2d and 3d quarters, 1921. Nothing of special interest.

North American Review. Feb., 1922. Includes an article by Maj. Gen. W. H. Carter on Our Military Policy in Eclipse.

Revue de Paris. Jan. 15 and Feb. 1, 1922. The January 15th number contains a continuation of the former French Minister of War's article on the World War (How I Appointed Foch and Petain).

Scientific American. Mar., 1922. Nothing of special interest.

Scientific Monthly. Feb., 1922. Nothing of special interest.

World's Work. March, 1922. Contains Part VII of Burton J. Hendrick's Life and Letters of Walter H. Page (The "Lusitania" and After).

INDEX TO SELECTED MAGAZINE ARTICLES, DOCUMENTS AND BOOKS

ARMORED AUTOMOBILES

NOTES ON ARMORED AUTOMOBILES. (A digest of a series of articles in the *Bulletin Belge des Sciences Militaires*, by Capt. Commandant Van der Donckt.) (French text, 1½ pages.)—*Revue de Cavalerie*, Jan.-Feb., 1922, p. 109.

ARTILLERY

Ammunition

THE AMMUNITION PROBLEM. (Deals mainly with ammunition production, but includes tables showing rates of artillery fire per day in recent wars, expenditure of artillery ammunition in modern battles, and expenditure of artillery ammunition in recent wars.) (4 pages.) By J. H. Burns.—*Army Ordnance*, Jan.-Feb., 1922, p. 195.

Fuzes

ARTILLERY FUZES. (3 pages.) By J. H. Woodberry.—*Army Ordnance*, Jan.-Feb., 1922, p. 201.

Propellants

PROPELLANT CHARGES. (3½ pages.) By Chas. S. Reed.—*Army Ordnance*, Jan.-Feb., 1922, p. 224.

ARTILLERY, ANTI-AIRCRAFT

ANTI-AIRCRAFT ARTILLERY. (10 pages.) By Capt. K. M. Loch, M. C., R. F. A.—*Jour. Royal Art.*, Jan., 1922, p. 433. See digest.

ARTILLERY, COAST

World War

BOMBARDMENT OF THE HARTLEPOOLS. (15th December, 1914. An account of a World War engagement between warships and shore batteries.) (4 pages.) By Col. L. Robson.—*Jour. Royal Art.*, Jan., 1922, p. 427.

ARTILLERY, FIELD

See also under *Liaison*.

A STUDY OF A SYSTEM OF ARTILLERY. (French text, 20 pages, to be continued.) By Col. Mussel.—*Revue Militaire Francaise*, Feb., 1922, p. 162.

Marches

ROAD WORK FOR THE ARTILLERY. (Account of engineer operations in connection with the approximately 600-mile march of a heavy artillery regiment over the roads of the Carolinas and Virginia.) (4½ pages.) By Capt. Geo. W. Gillette.—*Mil. Engr.*, Mar.-April, 1922, p. 89.

Materiel

NEW "FOUR-POINT-SEVEN" GUNS. (A Comparative Study of Pre-War and Post-War Corps Artillery Guns.) (4 pages.) By B. P. Joyce.—*Army Ordnance*, Jan.-Feb., 1922, p. 212. See digest.

NEW FIELD ARTILLERY MATERIEL. (Data on new experimental carriages, split and box-trail types, for 75-mm. gun and 105-mm. howitzer. (¼ col.)—*Army and Navy Register*, Feb. 11, 1922, p. 129.

Self-Propelled

SELF-PROPELLED TRACK-LAYING ARTILLERY. (5 pages.) By William T. Carpenter.—*Army Ordnance*, Jan.-Feb., 1922, p. 219.

Tactics and Technique

THE METHODS OF ARTILLERY SUPPORT OF THE ATTACK DURING THE WAR. (French text, 19 pages, to be continued.) By Col. Roger.—*Revue Militaire Francaise*, Oct., 1921, p. 55. Continued, 18 pages, Nov., p. 178; 21 pages, Dec., p. 335. See digest.

ARTILLERY, RAILWAY

World War

HISTORY AND DESCRIPTION OF THE 14-INCH NAVAL RAILWAY BATTERY. (1 page.) By Lt. Comdr. George T. Ladd, U. S. N. R. F.—*Army and Navy Journal*, Feb. 11, 1922, p. 557.

AUTOMATIC WEAPONS

AUTOMATIC AND SEMI-AUTOMATIC RIFLE FIRE. (Comparison of value of full and semi-automatic use of the automatic rifle.) (2½ pages.) By Lt. Col. Jennings C. Wise, O. R. C.—*Inf. Jour.*, Feb., 1922, p. 133. See digest.

AVIATION

Aerial Photography

See under *Military Engineering (Mapping)*.

Bombing

BOMBER VERSUS BATTLESHIP. (A brief for the battleship; why it will remain the backbone of the navy.) (1 page.) By Capt. Dudley W. Knox, U. S. N.—*Army and Navy Jour.*, Feb. 25, 1922, p. 605.

Commercial

CONGRESS HITS THE AIR MAIL. (Editorial comment on recent Congressional reduction of the Air Mail Service.) (1 col.)—*Literary Digest*, Feb. 11, 1922, p. 14.

CAVALRY

See also under *Equitation; Forage.*

THE CAVALRY THAT WE NEED. (A discussion of the necessity, role and organization of cavalry.) (French text, 20 pages.) By Gen. Robillot.—*Revue Militaire Generale*, Jan., 1922, p. 1.

Machine Guns

See under *Machine Guns.*

Organization

EVOLUTION IN THE ORGANIZATION OF THE GERMAN CAVALRY DURING THE WAR. (French text, conclusion, 23 pages.) By Von Rauchenberger.—*Revue de Cavalerie*, Jan.-Feb., 1922, p. 27.

Tactics and Technique

THE ORIENTATION OF THE CAVALRY. (Translation of an article which appeared in the *Revue de Cavalerie*, July-Aug., 1921.) By Gen. Brecard. Translated by Col. Conrad H. Lanza, F. A. Instructors' File No. 1200-J.

World War

See also under *Organization*, above.

THE FRENCH CAVALRY DURING THE FIRST THREE MONTHS OF THE WAR (French text, 12 pages, to be continued.) By Col. Monsenergue.—*Revue Militaire Generale*, Jan., 1922, p. 63.

THE GERMAN II CAVALRY CORPS AT LE CATEAU. (6 pages.) By Brig. Gen. J. E. Edmonds, C. B., C. M. G.—*Army Quarterly*, Jan., 1922, p. 250.

THE FRENCH CAVALRY IN THE PURSUIT IN MACEDONIA. (French text, conclusion, 23 pages.) By Maj. R. Prioux.—*Revue de Cavalerie*, Jan.-Feb., 1922, p. 50.

AN INDIAN CAVALRY ACTION IN MESOPOTAMIA. (4 pages.)—Lecture, Cav. School. Instructors' File No. 72-31.

CHEMICALS IN WAR

Abolition of

See also under *Washington Arms Conference.*

GAS WARFARE. (English views of the possibility of doing away with the use of chemicals in war.) (1½ cols.)—*Army, Navy & Air Force Gazette*, Jan. 28, 1922, p. 39.

UTOPIA-LIMITED. (English views on action of Washington Arms Conference re use of chemicals in war.)—*Army, Navy & Air Force Gazette*, Jan. 14, 1922, p. 19.

CHEMICAL WARFARE PROHIBITION. (A discussion of the action of the Washington Arms Conference and of the future preparedness in the United States.) (1 col.)—*Army and Navy Register*, Feb., 4, 1922, p. 110.

Tactics and Technique

CHEMICAL WARFARE. (Lecture delivered at the School of Military Engineering, Chatham, England, Dec. 8, 1921, 15 pages.) By Capt. S. J. M. Auld.—*Royal Engrs. Jour.*, Feb., 1922, p. 57.

COMMAND

See under *Leadership and Command.*

DOCTRINES AND PRINCIPLES OF WAR

THE RECASTING OF THE REGULATIONS AND OUR DOCTRINES OF WAR. (Studies of the World War.) (French text, continuation, 17 pages.)—*Revue Militaire Generale*, Jan., 1922, p. 21.

ENGINEERS

See also under *Military Engineering.*

Tactics and Technique

See also under *World War* below.

THE USE OF ENGINEER TROOPS. (2 cols.)—*Mil. Engr.*, March-April, 1922, p. 103.

World War

OPERATIONS OF A DIVISIONAL ENGINEER REGIMENT. (The First Engineers in France.) (3 pages.) By Capt. Thomas F. Farrell.—*Mil. Engr.*, March-April, 1922, p. 99.

EQUITATION

THE DEVELOPMENT OF EQUITATION THROUGH THE AGES. (French text, conclusion, 24½ pages.) By L. de Sevy.—*Revue de Cavalerie*, Jan.-Feb., 1922, p. 81.

FORAGE

ARMY COMPRESSED FORAGE TEST. (Results of recent tests in connection with maneuvers of the American Forces in Germany.) (½ col.)—*Army and Navy Reg.*, Feb. 11, 1922, p 131.

FOREIGN ARMIES AND NAVIES

China

THE MILITARY OF CHINA. (9 pages.) By Maj. L. D. Davis, 15th Inf.—*Inf. Jour.*, Feb., 1922, p. 150.

France

THE FRENCH MILITARY REORGANIZATION. (French text, 16 pages.) By Lt. Col. Emile Mayer.—*Revue Militaire Francaise*, Sept., 1921, p. 311.

THE FRENCH ARMY AND NAVY TODAY. (2 pages.)—*Literary Digest*, Feb. 11, 1922, p. 34.

THE FRENCH ARMY OF TOMORROW. (2 pages.) By Lt. Col. Cyrus A. Dolph, U. S. A., Ret. Translation from *l'Eclaireur de Nice.*—*Inf. Jour.*, Feb., 1922, p. 208.

FOREIGN COUNTRIES

China

CHINA'S VICTORY IN SHANTUNG. (1½ pages.)—*Literary Digest*, Feb. 11, 1922, p. 12.

France

The Feb. 11, 1922, number of the *Literary Digest* is a Special France Number, and includes articles on Fifty Years of the French Republic; France's Far-Flung Colonial Domain (with maps); What France Did in the War; The Complexities of French Politics; The French Army and Navy; Ties that Bind France and the United States; Outline of France's History; etc.

FOREIGN RELATIONS

INDEBTEDNESS OF OTHER GOVERNMENTS TO THE GOVERNMENT OF THE UNITED STATES. June, 1921. (Tabulated statement.) (½ page chart.)—*Literary Digest*, Feb. 11, 1922, p. 13.

GENERAL STAFF

CONFERENCES ON THE SERVICE OF THE GENERAL STAFF, ECOLE SUPERIEURE DE GUERRE, FRANCE. French text, 587 pages. Instructors' File No. 951.30.

HISTORICAL

See also under *World War*.

Miscellaneous

A DAY WITH THE BYZANTINE ARMY ON ACTIVE SERVICE. (A study of the organization and tactics of the ancient Byzantine army—"an army superior in organization, administration and tactics to any modern army up to the time of the French Revolution." (23 pages.) By. J. M. Scammell, Capt., Inf., R. C., U. S. A.—*Army Quarterly*, Jan., 1922, p. 312.

Napoleonic Wars

A DICTIONARY OF NAPOLEON. (A collection in dictionary, or alphabetical, form of the historical and personal matter relating to Napoleon. 465-page book.) By Hubert N. B. Richardson. (Funk and Wagnalls Co., New York.) See review.

THE JENA CAMPAIGN (Source Book). (684 pages.) Compiled by Col. Conrad H. Lanza, F. A. (The General Service Schools, Fort Leavenworth.)

Polish-Bolshevik War

THE BATTLE OF WARSAW. (French text, 17 pages, to be continued.)—*Revue Militaire Francaise*, Feb., 1922, p. 145.

Spanish-American War

MAJOR EDWARD E. HARTWICK, CITIZEN AND SOLDIER. (Includes his diary of the Spanish-American War, Santiago Campaign.) (135-page book.) By Gordon K. Miller. See review.

INDUSTRIAL MOBILIZATION

World War

THE INDUSTRIAL PREPARATION FOR THE WAR, IN FRANCE AND GERMANY. (French text, 15 pages, to be continued. Metallurgy.)

By Antoine de Tarle.—*Revue Militaire Francaise*, July, 1921, page 90. Continued, 26 pages, Sept., p. 327. Concluded, 13 pages, Oct., p. 93.

INFANTRY

See also under *Automatic Weapons; Liaison; Tanks.*

Tactics and Technique

A German Controversy Concerning the Infantry. (A review of a proposed infantry drill regulations, by Capt. Waldemar Pfeifer, German Army. French text, 21 pages.) By Capt. F. G.—*Revue Militaire Francaise*, Jan., 1922, p. 69.

Modern American Infantry. Its Methods and Its Problems. (11 pages.) By Maj. W. H. Wilbur, U. S. A.—*Army and Navy Jour.*, Feb. 18, 1922, p. 581.

The Evolution of the Methods and Conduct of Infantry Combat from 1870 to Date. (French text, continuation, 15 pages.) By Col. Z.—*Revue d'Infanterie*, Jan., 1922, p. 3.

LEADERSHIP AND COMMAND

Principles of Command. (Continuation, 18 pages.) By Rear Admiral Lloyd Chandler.—*U. S. Nav. Inst. Proc.*, Feb., 1922, p. 233.

LIAISON

The Problem of Liaison and Transmission. (Liaison between the artillery and infantry.) (French text, continuation, 17 pages.) By Maj. Gerin.—*Revue d'Infanterie*, Jan., 1922, p. 18.

MACHINE GUNS

Cavalry

Assignment and Distribution of (Cavalry) Machine Guns. (4 pages.)—Cav. School course, 1921-1922. Instructors' File No. 72-25.

Organization of (Cavalry) Machine Gun Units. (8 pages.)—Conference, Cav. School, Feb. 27, 1922. Instructors' File No. P.H. 72-32.

MILITARY ENGINEERING

See also under *Engineers.*

Bridges

Economics of Military Bridging. (Continuation, 6 pages.) By Lt. Col. P. S. Bond.—*Mil. Engr.*, Mar.-Apl., 1922, p. 105.

Electric Power

Electric Power in the French Base Ports, A.E.F. (3 pages.) By Allen E. Ransom.—*Mil Engr.*, Mar.-Apl., 1922, p. 78.

Fortifications, Field

The Evolution of Field Fortifications During the Late War. (4 pages.) (Extracted from the May-June number of the *Revue Militaire Generale.*) By Capt. Botte.—*Mil. Engr.*, Mar.-Apl., 1922, p. 82.

Geology

Influence of Geology and Topography on Strategy of the World War. (A study of the general geological and topo-

graphical characteristics of the western theater of operations.) (1¼ pages.)—*Mil. Engr.*, Mar.-Apl., 1922, p. 94.

Mapping

USE OF AERIAL PHOTOGRAPHS IN MAP MAKING. (2¼ pages.) By Glenn S. Smith.—*Engr. News-Record*, Feb. 2, 1922, p. 196.

WINGED SURVEYORS. (Methods of use of aerial photography in commercial surveying.) (4 pages.) By Sherman M. Fairchild.—*Scientific Amer.*, Mar., 1922, p. 158.

Railways

THE NORD RAILWAY DURING AND AFTER THE WAR. (Resume of an address by M. Javary, Chief Engr. of Operations, 6 pages.) By Col. W. B. Parsons, Engr. R.C.—*Mil. Engr.*, Mar.-Apl., 1922, p. 65.

Railways, Light

THE STRONACH DUTTON SYSTEM OF ROAD RAIL TRACTION. (Communciated by the Royal Engineer Board.) (4 pages.) *Royal Engrs. Jour.*, Feb., 1922, p. 93.

Roads

ROAD WORK FOR THE ARTILLERY. (Account of engineer operations in connection with the approximately 600-mile march of a heavy artillery regiment over the roads of the Carolinas and Virginia.) (4¼ pages.) By Capt. Geo. W. Gillette.—*Mil. Engr.*, Mar.-Apl., 1922, p. 89.

World War

SOME EXPERIENCES OF AN ENGINEER OFFICER WITH THE SALONIKA ARMY. (To be continued, 14 pages.) By Col. Commandant G. Walker, D.S.O.—*Royal Engrs. Jour.*, Feb., 1922, p. 72.

MILITARY INTELLIGENCE

World War

MILITARY INTELLIGENCE AND INCIDENTS CONNECTED THEREWITH DURING THE WORLD WAR. (A lecture delivered at the Royal Art Institution, Nov. 15, 1921. Includes some historic examples of poor and good intelligence work.) (10 pages.) By Lt. Gen. Sir G. M. Macdonogh, former Director of Mil. Int., British War Office.—*Jour. Royal Art.*, Jan., 1922, p. 339.

MILITARY MANUALS

THE MILITARY REGULATIONS. (Description of the new stystem of issuing training regulations for the French Army.) (French text, 10 pages.)—*Revue Militaire Francaise*, Feb., 1922, p. 221.

MILITARY POLICY

OUR MILITARY POLICY IN ECLIPSE. (7 pages.) By Maj. Gen. William Harding Carter.—*N. Amer. Review*, Mar., 1922, p. 331.

MILITARY SANITATION

NOTES ON THE HISTORY OF MILITARY MEDICINE. (The Middle Ages.) (Continuation, 17 pages.) By Col. Fielding H. Garrison, Med. Corps.—*Mil. Surg.*, Feb., 1922, p. 142.

MILITARY TRAINING

See also under *Military Manuals.*

THE TRAINING CENTERS. (5 pages.) By Col. M. B. Stewart, Gen. Staff.—*Inf. Jour.*, Feb., 1922, p. 119. See digest.

A METHOD OF STUDYING THE ART OF WAR. (French text, 19 pages.)—*Revue Militaire Francaise*, Oct., 1921, p. 74.

Solution of Problems

SOLVING PROBLEMS. (4 pages.)—Conference, Cav. School, Feb. 9, 1922. Instructors' File No. P.H. 72-13.

MISCELLANEOUS

METHODS OF COMBAT AND PACIFICATION EMPLOYED BY THE FRENCH IN MORROCO. (Spanish text, 16 pages.)—*Memorial de Artilleria*, Dec., 1921, p. 561.

MOBILIZATION

See also under *Industrial Mobilization.*

THE RECRUITING OF THE ENGLISH ARMY DURING THE GREAT WAR. (French text, 24 pages.)—*Revue Militaire Francaise*, Nov., 1921, p. 211.

PRISONERS OF WAR

PRISONERS OF WAR. (A study of their status and the treatment accorded them.) (9 pages.) By Dr. J. Fitzgerald Lee.—*Army Quarterly*, Jan., 1922, p. 348.

PYROTECHNICS

MILITARY PYROTECHNICS. (3 pages.) By S. Wiley.—*Army Ordnance*, Jan.-Feb., 1922, p. 231.

ORGANIZED RESERVES

THE ORGANIZED RESERVES. (Lecture given before the Association of the Army of the United States.) (1 page.) By Lt. Col. J. W. Williams, E.O.R.C.—*Mil. Engr.*, Mar.-Apl., 1922, p 96.

INFORMATION BULLETIN No. 3. (22 pages.)—Instructors' File No. P.H. 68.

RATIONS

CRITIQUE OF THE ARMY RATION, PAST AND PRESENT. (Continuation, 24 pages.)—By Lt. Col. John R. Merlin, San. Corps.—*Mil. Surg.*, Feb., 1922, p. 163.

RESERVE OFFICERS' TRAINING CORPS

NOTES ON R.O.T.C. PROBLEMS. (20 pages.) Prepared from the report of the Coast Artillery R.O.T.C. Normal School, Fort Monroe, July, 1921—*Jour. U.S. Art.*, Feb., 1922, p. 87.

R.O.T.C. MEMORANDA NOS. 10 AND 11. Instructors' File No. P. H. 65.

SIGNAL COMMUNICATIONS

See under *Liaison; Pyrotechnics.*

SUPPLY

World War

THE ADMINISTRATIVE SERVICES OF THE BRITISH EXPEDITIONARY FORCES DURING THE GREAT WAR. (10 pages.)—*Army Quarterly*, Jan., 1922, p. 302. See digest.

TACTICS

INFLUENCE OF NEW MACHINES UPON TECHNIQUE OF WARFARE. (Results of recent War Dept. questionnaire to bring out the present military thought regarding basic doctrine ... o powers and limitations and employment of various arms of service.) (1 col.)—*A. & N. Jour.*, Feb. 18, 1922, p. 584.

TANKS

THE FUTURE OF TANKS. (French text, 13 pages.) By Maj. D. P. Bloch.—*Revue Militaire Francaise*, Jan., 1922, p. 90.

PROBLEMS OF MECHANICAL WARFARE. (18 pages.) By Col. J.F.C. Fuller, D.S.O.—*Army Quarterly*, Jan., 1922, p. 284.

Tactics and Technique

TANKS AND THE HIGH COMMAND. (A discussion of the employment of tanks, with special regard to the relations of the High Command to same.) (French text, 14 pages, to be continued.) By Col. Chedeville.—*Revue Militaire Francaise*, Feb., 1922, p. 182.

A STUDY OF THE EMPLOYMENT OF TANKS. (French text, continuation, 27 pages.) By Col. Chedeville.—*Revue d'Infanterie*, Jan., 1922, p. 35.

TRACK-LAYING VEHICLES

See also under *Artillery, Field (Self-Propelled Vehicles)*.

SOLVING CROSS COUNTRY TRANSPORTATION PROBLEMS. (1 col.)—*A. & N. Jour.*, Feb. 18, 1922, p. 585.

WASHINGTON ARMS CONFERENCE

See also under *Chemicals in War (Abolition of)*.

PROCEEDINGS FROM DEC. 20, 1921, TO JAN. 18, 1922. (Includes the reports of the conference committee of experts on chemical warfare, the American advisory committee, and the General Board of the Navy, on the abolition of chemical warfare.) (48 pages.)—*Current History*, Feb., 1922, p. 699.

POWERS ADOPT TREATY AT ARMS CONFERENCE. (Statement of the provisions of the treaties adopted for limiting naval strength, for restricting submarine warfare, and prohibiting use of chemicals.) (2 cols.)—*A. & N. Jour.*, Feb. 4, 1922, p. 535.

WOODEN NUTMEGS. (British views on the accomplishments and results of the Washington Arms Conference.) (1 col.)—*Army, Navy & Air Force Gazette*, Jan. 7, 1922, p. 3.

SCIENTIFIC WARFARE. (Views of the French Senate concerning the results of the Weshington Arms Conference.) (1 page.)—*Canadian Mil. Gazette*, Feb. 14, 1922, p. 6.

WHAT THE ARMS PARLEY ACCOMPLISHED. (4 pages.)—*Literary Digest*, Feb. 18, 1922, p. 7.

WORLD WAR

See also under *Artillery, Coast; Artillery, Field; Artillery, Railway; Cavalry; Chemicals in War; Doctrines and Principles of War; Engineers; Industrial Mobilization; Military Engineering; Mobilization; Supply.*

Balkan Front

THE "CAUSA CAUSANS" OF THE WORLD WAR. (Bulgaria's Role in the Balkan War of 1912 and the World Conflict of 1915, 13 pages.) By Capt. Gordon Gordon-Smith, Serbian Army.—*Inf. Jour.*, Feb., 1922, p. 165.

Eastern Front

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